

DEMAND CONTROL VENTILATION

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Ventilation Requirements

- 15 – 20 CFM per person
- Typical Classroom = 25 students
- $25 \text{ stu.} \times 20 \text{ CFM} = 500 \text{ CFM/classroom}$
- All rooms used the same and at all times?

Ventilation Requirements

NO!

A July 2003 article in the ASHRAE Journal states:
“Field experience indicates that actual occupancy levels are at least 25% to 30% lower and perhaps as much as 60% to 75% lower in some buildings than design levels.”

So What?

All of that outside air must
be heated or cooled



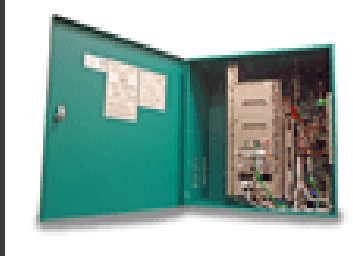
Demand Control Ventilation – Strategies

- Duct sensors in varied use spaces Gyms, Cafeterias, Auditoriums
- Air Flow Measuring Stations
- Individual stand alone room CO₂ sensors

Centralized Demand Ventilation



Components



Sensor Suite



Air Data Routers



Room Sensor



Structured Cable



Vacuum Pump

Benefits

- CO2 sensing in each room
- Differential CO2 readings outside air vs. room air
- One sensor for entire system – easily calibrated
- Lower cost of outside air system
 - Smaller units
 - Variable Speed Drives
- Integration to Building Automation System